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- 1202 Low-volume coronary artery bypass surgery: Measuring and optimizing performance ■**
David M. Shahian, MD and Sharon-Lise T. Normand, PhD, Boston, Mass


General Thoracic Surgery (GTS)

- 1210 Postpneumonectomy syndrome: Surgical management and long-term results** 
K. Robert Shen, MD, John C. Wain, MD, Cameron D. Wright, MD, Hermes C. Grillo, MD, and Douglas J. Mathisen, MD, Boston, Massachusetts

This study of patients with postpneumonectomy syndrome treated by mediastinal repositioning reports short and long-term outcomes and quality of life assessment. Surgical repositioning of the mediastinum can be performed with low mortality and morbidity and provides immediate and lasting symptomatic relief to patients with postpneumonectomy syndrome.

- 1220 Secretory phospholipase A₂ is required to produce histologic changes associated with gastroduodenal reflux in a murine model**
Ashok Babu, MD, Xianzhong Meng, MD, PhD, Anirban M. Banerjee, PhD, Fabia Gamboni-Robertson, PhD, Joseph C. Cleveland, MD, Sagar Damle, MD, David A. Fullerton, MD, and Michael J. Weyant, MD, Denver, Colo

Secretory phospholipase A₂ (sPLA₂), an important mediator of inflammation in the gut, has also been implicated in affecting cell proliferation through its byproducts. In this study we demonstrate the importance of sPLA₂ in early gastroduodenal reflux-induced mucosal hyperplasia.

- 1228 En bloc esophagectomy reduces local recurrence and improves survival compared with transhiatal resection after neoadjuvant therapy for esophageal adenocarcinoma**
 *C. Rizzetto, MD, S. R. DeMeester, MD, J. A. Hagen, MD, C. G. Peyre, MD, J. C. Lipham, MD, and T. R. DeMeester, MD, Los Angeles, Calif*

Neoadjuvant therapy is commonly used before surgical resection for esophageal cancer, and the esophagectomy is often done as a transhiatal procedure. Compared with a transhiatal resection, an en bloc resection reduced the incidence of local recurrence and improved overall survival and survival in patients with residual disease after neoadjuvant therapy.

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Surgery for Acquired Cardiovascular Disease (ACD)

1237 A novel bioengineered small-caliber vascular graft incorporating heparin and sirolimus: Excellent 6-month patency

Yosuke Ishii, MD, Shun-ichiro Sakamoto, MD, Russell T. Kronengold, PhD, Renu Virmani, MD, Elias A. Rivera, MHS, Scott M. Goldman, MS, Ericka J. Prechtel, MS, James G. Hill, MS, and Ralph J. Damiano Jr, MD, St Louis, Mo, Exton, Pa, and Washington, DC

A unique bioengineered, microporous, drug-eluting graft had excellent patency throughout the 6 months after implantation. Biological agents, heparin and sirolimus, were impregnated into the graft and encouraged luminal endothelialization and neointimal formation. This graft has the potential to become an implantable graft for coronary artery bypass grafting.

1247 Magnetic resonance imaging assessment of reverse left ventricular remodeling late after restrictive mitral annuloplasty in early stages of dilated cardiomyopathy

Jos J. M. Westenberg, PhD, Jerry Braun, MD, Nico R. Van de Veire, MD, PhD, Robert J. M. Klautz, MD, PhD, Michel I. M. Versteegh, MD, Stijntje D. Roes, MD, Rob J. van der Geest, MSc, Albert de Roos, MD, PhD, Ernst E. van der Wall, MD, PhD, Johan H. C. Reiber, PhD, Jeroen J. Bax, MD, PhD, and Robert A. E. Dion, MD, PhD, Leiden, The Netherlands

Magnetic resonance imaging demonstrated significant left atrial and ventricular reverse remodeling and improvement of forward left ventricular ejection fraction late (3–4 years) after restrictive mitral annuloplasty in patients with nonischemic dilated cardiomyopathy, mild to moderate heart failure, and severe mitral regurgitation.

1254 The “occasional open heart surgeon” revisited

Joseph S. Carey, MD, Joseph P. Parker, PhD, Claude Brandeau, BS, and Zhongmin Li, PhD, Davis, Calif

A high-volume surgeon becomes an “occasional open heart surgeon” when working at multiple hospitals and performing a small volume of procedures at some of them. This study suggests that volume is not as important as processes of care in determining outcomes of coronary artery bypass grafting procedures and that system factors might be more important to outcomes than surgeon experience.

1261 Long-term results of the open stent-grafting technique for extended aortic arch disease

Kazuo Shimamura, MD, Toru Kuratani, MD, PhD, Goro Matsumiya, MD, PhD, Masaaki Kato, MD, PhD, Yukitoshi Shirakawa, MD, PhD, Hiroshi Takano, MD, PhD, Noriyuki Ohta, MD, PhD, and Yoshiki Sawa, MD, PhD, Osaka, Japan

Long-term observation showed safety and good durability of the open stent-graft technique for aortic arch disease. This technique could be an attractive treatment option for aortic arch aneurysm with distal extension and aortic dissection necessitating aortic arch replacement.

1270 Survival after valve replacement for aortic stenosis: Implications for decision making

Tomislav Mihaljevic, MD, Edward R. Nowicki, MD, Jeevanantham Rajeswaran, MSc, Eugene H. Blackstone, MD, Luigi Lagazzi, MD, James Thomas, MD, Bruce W. Lytle, MD, and Delos M. Cosgrove, MD, Cleveland, Ohio

Current guidelines recommend aortic valve replacement for aortic stenosis when symptoms are manifest. However, a complex interplay of factors, including severity of stenosis, left ventricular hypertrophy and dysfunction, age, and prosthesis–patient size, influence late survival before symptoms occur. Symptoms should not be the sole guideline for valve replacement.

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1280 A 20-year experience with mitral valve repair with artificial chordae in 608 patients

Loris Salvador, MD, Salvatore Mirone, MD, Roberto Bianchini, MD, Tommaso Regesta, MD, Fabio Patelli, MD, Giuseppe Minniti, MD, Mauro Masat, MD, Elena Cavarretta, MD, and Carlo Valfrè, MD, Treviso, Italy

In 20-year experience, 608 consecutive patients underwent mitral valve repair with artificial neochordae with the following outcomes: operative mortality less than 1%, freedoms from reoperation and recurrent mitral regurgitation at 15 years of 92% and 85%, respectively, and repair failures unrelated to rupture or degeneration of implanted GORE-TEX expanded polytetrafluoroethylene sutures.

1288 Operative delay for peripheral malperfusion syndrome in acute type A aortic dissection: A long-term analysis

Himanshu J. Patel, MD, David M. Williams, MD, Narasimham L. Dasika, MD, Yoshikazu Suzuki, MD, and G. Michael Deeb, MD, Ann Arbor, Mich

This is a long-term analysis of a strategy of initial percutaneous fenestration and stenting with planned delayed operative repair for patients presenting with acute type A aortic dissection, peripheral malperfusion, and ischemic end-organ dysfunction.

1297 Impact of left atrial volume reduction concomitant with atrial fibrillation surgery on left atrial geometry and mechanical function

Akira Marui, MD, PhD, Yoshiaki Saji, MD, Takeshi Nishina, MD, PhD, Eiji Tadamura, MD, PhD, Shotaro Kanao, MD, Takeshi Shimamoto, MD, Nozomu Sasahashi, MD, Tadashi Ikeda, MD, PhD, and Masashi Komeda, MD, PhD, Kyoto, Japan

LA volume reduction surgery concomitant with the Maze procedure was a predominant independent variable that influenced postoperative left atrial geometry and mechanical function in patients with refractory atrial fibrillation and left atrial enlargement. Left atrial reduction helped restore booster pump and reservoir function, and facilitated left atrial reverse remodeling.

1306 Effect of procedural volume on outcome of coronary artery bypass graft surgery in Japan: Implication toward public reporting and minimal volume standards

Hiroaki Miyata, MD, Noboru Motomura, PhD, MD, Yuichi Ueda, PhD, MD, Hikaru Matsuda, PhD, MD, and Shinichi Takamoto, PhD, MD, Tokyo and Hyogo, Japan

In Japan, high-volume compared with low-volume providers of CABG had better outcomes. For public reporting, hospital-based evaluation might be more credible than surgeon-based evaluation. Although minimal volume standards might be effective to improve quality to some extent, volume has limitations as a marker of quality because of its wide range of variance.

Surgery for Congenital Heart Disease (CHD)

1313 Surgical treatment of congenital mitral valve disease: Midterm results of a repair-oriented policy

Guido Oppido, MD, Ben Davies, MRCS(Eng), D. Michael McMullan, MD, Andrew D. Cochrane, MD, FRACS(CTh), Michael M. H. Cheung, MD, Yves d'Udekem, MD, PhD, and Christian P. Brizard, MD, Melbourne, Australia

Despite a wide spectrum of valve morphology, associated lesions, and small patient size, successful repair for congenital mitral disease can be performed with low mortality and acceptable reoperation rate while obviating risks associated with valvular prostheses. Suboptimal repair was a predictor for reintervention; however, further repair was often successful.

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Evolving Technology (ET)

1322 Short-term conversion to open surgery after endovascular stent-grafting of the thoracic aorta: The Talent thoracic registry

Marek P. Ehrlich, MD, Christoph A. Nienaber, MD, Hervé Rousseau, MD, Jean-Paul Beregi, MD, Philippe Piquet, MD, Marc Schepens, MD, Jean-Michelle Bartoli, MD, Martin Schillinger, MD, and Rossella Fattori, MD, Vienna, Austria, Rostock, Germany, Toulouse, Lille, and Marseille, France, Nieuwegein, The Netherlands, and Bologna, Italy

Endovascular treatment for thoracic aortic disease with the Talent stent-graft is associated with a relatively low rate of late conversion to conventional surgery. Better results may be achieved by excluding patients with Marfan syndrome for such a procedure and early aggressive treatment for early type I endoleaks.

1327 Endocardial hypothermia and pulmonary vein isolation with epicardial cryoablation in a porcine beating-heart model

Saqib Masroor, MD, MHS, Mary-Ellen Jahnke, RN, Antoine Carlisle, DVM, Catherine Cartier, BSc, MEng, Jean-Pierre LaLonde, BSME, Timothy MacNeil, BS, Andre Tremblay, BSME, and Fred Clubb Jr, DVM, PhD, Hackensack, NJ, Kirkland, Quebec, Canada, and College Station, Tex

The degree of endocardial hypothermia is inversely related to the thickness of the tissues. In a porcine model of normothermic beating-heart epicardial cryoablation, acute and long-term pulmonary vein isolation and histologic transmuralities were demonstrated. Endocardial temperatures during the procedure were sufficiently low for cell killing.

1334 Stereoscopic vision display technology in real-time three-dimensional echocardiography-guided intracardiac beating-heart surgery

Nikolay V. Vasilyev, MD, Paul M. Novotny, PhD, Joseph F. Martinez, DVM, Hugo Loyola, MS, Ivan S. Salgo, MD, MS, Robert D. Howe, PhD, and Pedro J. del Nido, MD, Boston, Cambridge, and Andover, Mass

Stereoscopic vision display was evaluated as an aid for intracardiac navigation during 3-dimensional echocardiography-guided beating-heart surgery in a model of atrial septal defect closure. The study demonstrates that stereoscopic vision technology has significant advantages over the conventional display when used to guide beating-heart intracardiac surgical intervention, potentially improving procedure safety.

1342 Low-dose dobutamine cardiac magnetic resonance imaging with myocardial strain analysis predicts myocardial recoverability after coronary artery bypass grafting

D. Dean Potter, MD, Philip A. Araoz, MD, Kiaran P. McGee, PhD, W. Scott Harmsen, MS, Jayawant N. Mandrekar, PhD, and Thoralf M. Sundt III, MD, Rochester, Minn

Dobutamine-stressed tissue-tagged magnetic resonance imaging with strain analysis was used to predict myocardial recoverability after coronary artery bypass. Strain analysis was able to quantitate changes with dobutamine stress and after bypass grafting. Magnetic resonance strain analysis predicted recoverability of myocardium after surgical intervention and holds promise as a preoperative assessment tool.

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1348 Local infusion of bupivacaine combined with intravenous patient-controlled analgesia provides better pain relief than intravenous patient-controlled analgesia alone in patients undergoing minimally invasive cardiac surgery

Kuan-Ming Chiu, MD, Chia-Chan Wu, MD, Ming-Jiuh Wang, MD, PhD, Cheng-Wei Lu, MD, Jiann-Shing Shieh, PhD, Tzu-Yu Lin, MD, and Shu-Hsun Chu, MD, Taipei, Taiwan, Republic of China

In this prospective randomized double-blind study, the combination of infusion of 0.15% bupivacaine in the thoracotomy wound and intravenous patient-controlled analgesia reduced both acute pain (day 1 to day 3) and chronic pain (3 months) in minimally invasive cardiac surgery when compared with patient-controlled analgesia alone.

Cardiopulmonary Support and Physiology (CSP)

1353 Improving outcomes with long-term “destination” therapy using left ventricular assist devices

James W. Long, MD, PhD, Aaron H. Healy, BS, Brad Y. Rasmusson, MD, Cris G. Cowley, MD, Karl E. Nelson, RN, MBA, Abdallah G. Kfoury, MD, Stephen E. Clayson, MD, Bruce B. Reid, MD, Stephanie A. Moore, MD, Douglas U. Blank, MD, and Dale G. Renlund, MD, Salt Lake City, Utah, Boston, Mass, and Idaho Falls, Idaho

Destination therapy experience using long-term left ventricular assist devices was analyzed relative to the benchmark REMATCH trial to evaluate the potential for improving outcomes with this pioneering therapy for advanced heart failure. This analysis provides evidence that destination therapy can be improved well beyond the experience of the REMATCH trial.

1362 Extracorporeal lung membrane provides better lung protection than conventional treatment for severe postpneumectomy noncardiogenic acute respiratory distress syndrome

Manuela Iglesias, MD, Philipp Jungebluth, Carole Petit, RN, María Purificación Matute, MD, Irene Rovira, MD, Elisabeth Martínez, MD, Miguel Catalan, MD, José Ramirez, MD, and Paolo Macchiarini, MD, PhD, Barcelona, Spain

A pig model of severe postpneumectomy noncardiogenic ARDS was developed by performing a left pneumectomy and depleting the surfactant of the right lung. The combination of a pumpless extracorporeal lung membrane and static ventilation significantly reduced pulmonary morbidity of the injured lung and yielded better survival than conventional treatment.

Cardiothoracic Transplantation (TX)

1372 Association of device surface and biomaterials with immunologic sensitization after mechanical support

Isaac George, MD, Patrick Colley, BS, Mark J. Russo, MD, Timothy P. Martens, MD, Elizabeth Burke, MS, Mehmet C. Oz, MD, Mario C. Deng, MD, Donna M. Mancini, MD, and Yoshifumi Naka, MD, PhD, New York, NY

We investigated the hypothesis that axial-flow devices (n = 16) without biologic membranes would cause less allosensitization than devices (n = 36) with biologic membranes. Overall, fewer axial-flow than pulsatile devices demonstrated positive anti-HLA antibody during support, and fewer posttransplant episodes of acute rejection per patient were seen.

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- 1384 Papillary muscle sandwich plasty for ischemic mitral regurgitation: A new simple technique**
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Vikas Shetty, MD, MRCS, Hunaid A. Vohra, MD, MRCS, Nicola Viola, MD, Ivan Brown, MD, FRCS, and Stephen M. Langley, MD, FRCS (CTh), Southampton, United Kingdom
- 1389 Significance of radial artery anomalies in coronary artery bypass graft surgery**
Chee Fui Chong, FRCSEd(CTh), MD (Lond), and Anthony De Souza, FRCS(CTh), Brunei, Darussalam, and London, United Kingdom
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Fazil Azeem, MS, FRCS, Claire Rathwell, FRCA, and Wael I. Awad, MD, FRCS, London, United Kingdom
- 1396 Congenital Bochdalek hernia presenting with acute pancreatitis in an adult**
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- 1398 The feasibility of diaphragmatic transplantation as potential therapy for treatment of respiratory failure associated with Duchenne muscular dystrophy: Acute canine model**
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Notice of Correction

- 26A *Lytle BW. Who are we – Who will we be? J Thorac Cardiovasc Surg 2008;135:965-75. The Publisher regrets that an error appears in the title of the above-noted article. The correct title of Dr. Lytle's article is: "Who we are – Who we will be".*

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